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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,010	11/13/2001	Tetsuyoshi Inoue	204552021700	6384

7590                  04/09/2003

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EXAMINER

NGUYEN, TUAÑ N

ART UNIT	PAPER NUMBER
2828	

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	09/987,010	INOUE ET AL.
<b>Examiner</b>	<b>Art Unit</b>	
Tuan N Nguyen	2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                  2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-5 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.



PAUL J.  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) The proposed drawing correction filed on 03/03/2003 is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
  - a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Drawings***

1. Acknowledge and acceptance of drawing correction filed March 03, 2003.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 1-5 are rejected under 35 U.S.C 112, second paragraph, as being indefinite, vague, and confusing for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention, for example.

Claims 1 and 2 recites a semiconductor laser comprising a semiconductor laser chip mounted on a base portion using an electrically conductive die-bond paste where thermal resistance of the semiconductor laser is at a give temperature. There is insufficient means, structure and relationship in conform the semiconductor device having a given property. The claim 1 lack of means in performing the mounting of semiconductor chip, heating or pressuring the laser chip, and how carry out the temporary curing or final curing of conductive die-bond paste. There is insufficient means, structure and functional relationship, which render the claims vague and indefinite. Claims 3-5 are rejected base on the same reason.

### ***Claim Rejections - 35 USC § 102***

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4. The following is a quotation of 35 U.S.C. 102(b) which forms the basis for all obviousness rejections set forth in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 2 rejected under 35 U.S.C. 102(b) as being unpatentable over Inaba (US 6255742). Inaba '742 shows in (Fig 9a-d: 1,2,19; Fig 11b:20, 7) a semiconductor laser device having semiconductor laser chip mounted on a based portion using electrically conductive die-bond paste (Col 8: 62-67), where thermal resistance of semiconductor device is 90<sup>0</sup>C/W or less (Col 7: TABLE 1). Since claim 1 recites the same or identical elements/limitations it is inherent to use patents ('742) to recite the method of manufacturing semiconductor laser device, product by process.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or non-obviousness.

7. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable Inaba (US 6255742).

Inaba '742 discloses the amount of die-bond surface of semiconductor laser chip (Col 8: 62-67; Col 0-60). It is within one skill in the art knowing that as semiconductor chip is pushed onto the die-bond paste toward the base there will be some creep-up from conductive die-bond paste. Discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller, 105 USPQ 233.*

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable Inaba (US 6255742) in view of Yoshiura Masayasu (JP 08-095504).

Inaba (US 6255742) discloses the above, except that the conductive die-bond paste is silver paste. Yoshiura Masayasu (JP 08-095504) discloses in the DETAILED DESCRIPTION section [0012] light emitting diode device mounted on a base portion by using an electrical conductive die-bond silver paste. For the benefit of using the electrical conductive die-bond silver paste, it would have been obvious to one of ordinary skill in the art to provide Hainz et al. and Applicant the electrical conductive die-bond silver paste for bonding the two structure together.

***Response to Amendment***

9. It is within one skill in the art to know that semiconductor device has thermal resistance way above 100<sup>0</sup>C, therefore having semiconductor thermal resistance or operate below 90<sup>0</sup>C is nothing new. Semiconductor chip can be kept pressurized toward the base by a forceps, finger, or by its own weight – there is nothing say about equipment/ tool to perform such claim function.

Hainz et al. US 5138428 discloses the claimed step of finally curing the conductive die-bond paste. It has been held that omission of a function in a combination where the remaining elements perform the same function before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

#### ***Citation of Pertinent References***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is cited primarily to show the product of the instant invention.

Reeder et al. (US006426552B1), Kotato (US006099678A), Kato et al. (US006349104B1), Preston et al. (US006187611B1), Suminoe et al. (US006380620B1), Takeda (US006014318A), Sota et al. (US006064111A), Ohki et al. (US006143590A), Kinsman (US006239012B1) disclose connection of laser diode device and fabrication of the same.

#### ***Communication Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (703) 605-0756. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-8592 for regular communications and (703) 746-8592 for After Final communications.

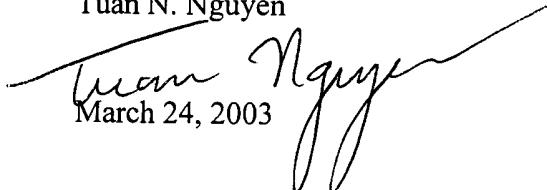
Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

  
PAUL IP  
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Tuan N. Nguyen

  
March 24, 2003